ARDAYCAAWIYE

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Total score

Name ……..

School……..

Roll No……

Republic of Somaliland

Somaliland National Examination Board

Form Four

MATHEMATICS

PAPER ONE

JUNE 2019

TIME 2 HOURS

Plus 10 Minutes for reading through paper

INSTRUCTIONS TO CANDIDATES

This paper consists of 12 printed pages.

Count them now. Inform the invigilator if there are any pages missing.

PART 1:	30 MULTIPLE CHOICE QUESTIONS	60 Marks
PART 2:	80 SRTUCTURES QUESTIONS	60 MARKS
	TOTAL	**100 MARKS**

- Answer ALL questions in part 1 and 2
- All answers must be written on this paper in the spaces provided immediately after each question. Only write on this exam paper

Use this page for rough work. It will NOT be marked.

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PART ONE: Multiple choice **(30 x 2 = 60 marks)**

Choose the correct. Answer ALL the questions. Each question carries 2 marks

1. The median of 2,2,5,1,6,7,7 is:
   A) 5, B) 1 C) 3 D) 4

2. If A={a, b, c, d} B={b,c,1,2,}, then AUB is:
   A) {a, b, 1, 2} B) {a, b, c, d,1,2} C) {d, c, a, a,2} D) {a, b, c, 1,2}

3. $\frac{7!}{2!5!}$
   A) 1 B) 7 C) 42 D) 21

4. $\lim_{X\to 2} X^2$-1 gives
   A) 5 B) 4 C) 3 D) 2

5. The probability of raining is
   A) $\frac{6}{7}$ B) $\frac{1}{7}$ C) $\frac{5}{7}$ D) $\frac{2}{7}$

6. Evaluate $\lim_{x\to\infty} \frac{6x^5 - 1}{x^5}$
   A) 6 B) 5 C) X^5 D) $\frac{1}{X^5}$

7. Converting $\frac{3}{4}$ gives :
   A) 0.5 B) 0.57 C) 0.7 D) 0.75

8. $3\sqrt{27}$ gives :
   A) 9 B) 27 C) 3 D)2

9. The slope of the curve y= $3x^2$-x-1 at x=0 :
   A) 6 B) -1 C) 2 D) 0.

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10. $(2-3i) + (5 + 3i)$ equals:

A) 7 B) 5 C) -3 D) $6i$

11. $3x - 1 > 8$:

A) 8 B) 9 C) 11 D) 3

12. $^{n}C_{r}$:

A) $\frac{n!}{r!}$ B) $\frac{n!}{(n-r)}$ C) $\frac{n!}{r!(n-r)!}$ D) $\frac{n!}{r!(n-r)!}$

13. the derivative of $\frac{x^2 - x - 2}{(x+1)}$:

A) 2x -1 B) 1 c) 2 D) -1

14. If a cos B= $\frac{3}{4}$, find sin B

A) $\frac{1}{5}$ B) $\frac{3}{4}$ C) $\frac{1}{4}$ D) $\frac{4}{5}$

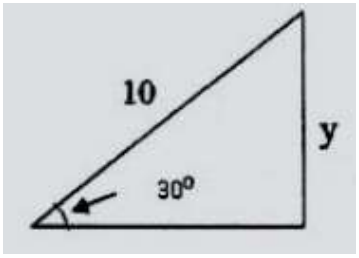
15. $\frac{5\pi}{6}$ equals :

A) 150 B) 120^0 C) 90^0 D) 60^0

16. Convert 240^0 to radians :

A) $\frac{3\pi}{4}$ B) $\frac{\pi}{3}$ C) $\frac{4\pi}{3}$ D) $\frac{2\pi}{3}$

17. Find the length of side marked y :



A) 6 B) 5 C) 10 D) 11

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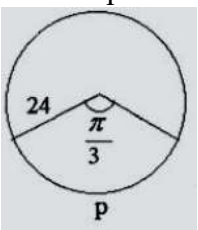
18. i^{29} is:

A) 1 B) -1 C) *i* *D) -i*

19. Find the length of the Arc "p"



A) 8π B) 6π C) 4π D) 2π

20. $\frac{2}{1+i}$ equals :

A) $1+i$ *B) 1-i* *C) i* *D) –i*

21. If f (x) = $5x^6 - 100$, evaluate $\frac{df}{dx}(1)$

A) 32 B) -100 C) 30 D) 6

22. Find the value of $\cos^2 x = 1-\sin^2 x$:

A) $\frac{-1}{2}$ B) $\frac{1}{2}$ C) -1 D) 1

23. The determinant of $B=\begin{pmatrix} 8 & -4 \\ 1 & 1 \end{pmatrix}$ is

A) 12 B) 6 C) 4 D) -4

24. Solve $x^2 + 9 = 0$

A) $\pm 3i$ *B)* ± 3 *C)* $9i$ *D)* $-9i$

25. Evaluate $\cot 135^0$ equals :

A) 1 B) -1 C) $\frac{\sqrt{2}}{2}$ D) $-\frac{\sqrt{2}}{2}$

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26) A box contains 7 white ball and 6 red ball. What is the probability of getting a white Ball?

A) $\frac{1}{13}$ B) 1 C) $\frac{6}{13}$ D) $\frac{7}{13}$

27) Evaluate $\int_0^2 4x^3\,dx$

A) 4 B) 2 C) 16 D) 8

28) The differentiation of $y = 3x^3 - 1$ equals:

A) $9x^2 - 1$ B) $3x^2$ C) $6x^2 - x$ D) $9x^2$

30) The range of the following items: 12,21,6,3,29,10,17

A) 17 B) 12 C) 26 D) 29

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Part Two: 6 structured questions **(40 marks)**

1. Write in standard
   a) $(5 - 2i)(8 + 3i)$

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b) $\frac{2}{1-3i}$

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2. a). find the limit of

$$\lim_{x \to -3} x^2 + 1$$

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B: $\lim_{x \to 3} \frac{5x^2 - 20x + 15}{x - 3}$

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3. Evaluate the standard deviation and variance of 2,3,6,10,14

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4. Find the mean, median and mode of the following set of data:
10,11,13,10,10,11,14,11,10

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5. A committee of three persons is to be constituted from group of 2 men and 3 Women, in how many ways can this be done

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6. a). if 25 suits cost $ 560, calculate the cost of 5 suits?

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B: if 312 suits cost $ 600 calculate the number of suits that cost $ 100?

7. Find the equation of the normal to $y=2x^2 + x + 3$ at $x=2$

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8. Find the mid-point of the following two points (6, 4) and (4 , 2)

END

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